# MATHEMATICS

## TERM - I

# CHAPTER 01

# NUMBERS

**NUMBERS HELP US TO COUNT CONCRETE OBJECTS.**

## Formation of Smallest and Greatest Numbers:

### Ascending Order:

1. It means, arrangement from the smallest to the greatest numbers.
2. For the smallest number, we arrange the given digits in ascending order.
   (e.g.) The smallest four digit number using the digits 5, 7, 8, 3 is 3578.
3. Suppose the digits given may be 5, 7, 8, 0 then arranging the digits in ascending order we get the smallest number as 0578. But leftmost zero has no value and it becomes the three digit number.
4. In this case we have to interchange the leftmost two digits to get the number
   ∴ The smallest four digit number is 5078.

### Descending Order:

1. It means arrangement from the greatest to the smallest number.
2. For the greatest number we arrange the digits in descending order.
   (E.g.) The greatest four digit number using the digits 2, 0, 9, 7 is 9720.

### Place Value:

When a number consists of more than one digit each digit has a value depending upon its position.

(E.g.) The place value of each digit in 5432 is 5 thousands, 4 hundreds, 3 tens and 2 ones

The expanded form of 5432 is $5 \times 1000 + 4 \times 100 + 3 \times 10 + 2 \times 1$.

### Place Value Chart

**Indian Number System**

| Periods | Arab | | Crores | | Lakhs | | Thousands | | Ones | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TA | A | TC | C | TL | L | T TH | TH | H | T | O |
| Indian Number System | Ten Arab | Arab | Ten Crores | Crores | Ten Lakhs | Lakhs | Ten Thousands | Thousands | Hundreds | Tens | Ones |

1. The Place value increases from right to left.
2. Every digit of a number has a place value which gives the value of the digit.
3. From the right, first comma comes after 3 digits, and subsequent commas comes after every 2 digits

**International Number System**

| Periods | Billions | | | Millions | | | Thousands | | | Ones | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| International Number System | Hundred Billion | Ten Billion | Billion | Hundred Million | Ten Million | Million | Hundred Thousand | Ten Thousand | Thousand | Hundred | Ten | One |

In International System, commas comes after every 3 digits from the right.

## TRY THESE (Text book Page No.2)

- The Successor of 4576 is _____. **[Ans: 4577]**
- The Predecessor of 8970 is _____. **[Ans: 8969]**
- 999 + 1 equals _____. **[Ans: 1000]**
- 10000 – 1 equals _____. **[Ans: 9999]**
- The Predecessor of the smallest 5 digit number is_____.
  **[Ans: Greatest 4 digit number (9999)]**

## TRY THESE (Text book Page No.4)

**1. Give 3 examples where the number of things counted by you would be a 5 digit number or more.**

**Sol:** 1. Number of stars in the sky.
2. Number of people living in Tamilnadu.
3. Number of accidents in India in the year 2017.

**2. There are ten lakh people in a district. What would be the population of 10 such districts?**

***Sol.*** Number of people in the district = 10,00,000

$\therefore$ Population of 10 such districts = 10,00,000 × 10 = 1,00,00,000

$\therefore$ Total population of 10 districts would be one crore.

$\therefore$ 10 lakh = 10,000 Hundreds

**3. The Government spends rupees 2 crores for education in a particular district every month. What would be its expenditure over 10 months?**

***Sol.*** Expenditure for one month = 2 crores.

$\therefore$ Expenditure for ten months = 2,00,00,000 × 10 = 20,00,00,000

Expenditure for 10 months = twenty crores.

## TRY THESE (Text book Page No.5)

**Complete the table**

Table 1.3

| Number | TC | C | TL | L | T TH | TH | H | T | O | Number Name |
|---|---|---|---|---|---|---|---|---|---|---|
| 1670 | | | | | | 1 | 6 | 7 | 0 | Thousand Six Hundred and Seventy |
| 47684 | | | | | 4 | 7 | 6 | 8 | 4 | Forty Seven Thousand Six Hundred and Eighty Four |
| 120001 | | | | 1 | 2 | 0 | 0 | 0 | 1 | One Lakh Twenty thousand one |
| 7800500 | | | 7 | 8 | 0 | 0 | 5 | 0 | 0 | Seventy Eight Lakhs Five Hundred |
| 53409098 | | 5 | 3 | 4 | 0 | 9 | 0 | 9 | 8 | Five crore Thirty Four Lakhs Nine Thousand Ninety Eight |
| 198765912 | 1 | 9 | 8 | 7 | 6 | 5 | 9 | 1 | 2 | Nineteen crore Eighty Seven Lakhs Sixty Five Thousand Nine Hundred and twelve |

## TRY THESE (Text book Page No.6)

**1. Read and expand the following numbers:**

**i. 2304567**

**Sol:** Number : 23,04,567

Expanded form : $2 \times 1000000 + 3 \times 100000 + 0 \times 10000 + 4 \times 1000 + 5 \times 100 + 6 \times 10 + 7 \times 1$

Read as : Twenty Three Lakh Four Thousand Five Hundred and Sixty Seven

**ii. 4509888**

**Sol:** Number : 45,09,888

Expanded form : $4 \times 1000000 + 5 \times 100000 + 0 \times 10000 + 9 \times 1000 + 8 \times 100 + 8 \times 10 + 8 \times 1$

Read as : Forty Five Lakh Nine Thousand Eight Hundred and Eighty Eight

**iii. 9553556**

**Sol:** Number : 95,53,556

Expanded form : $9 \times 1000000 + 5 \times 100000 + 5 \times 10000 + 3 \times 1000 + 5 \times 100 + 5 \times 10 + 6 \times 1$

Read as : Ninety Five Lakh Fifty Three Thousand Five Hundred and Fifty Six

**2. How many hundreds are there in 10 lakh?**

**Sol:**

| 1 | 0 | 0 | 0 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|
| TL | L | TTH | TH | H | T | O |
| | | | | 1 | 0 | 0 |

There are four places to the left of Hundred.

Maths

**3. 10 lakh candidates write the Public Exam this year. If each exam centre is allotted with 1000 candidates. How many exam centres would be needed?**

***Sol.*** Candidate for one centre = 1000 ∴ For 10 lakh people

Ten lakh contains $\frac{10,00,000}{1000}$ = 1000 Thousands

∴ For 10 lakh people 1000 centres are needed

## TRY THESE (Text book Page No.7)

**1. Find the place value of underlined digits**

**(i) 3841567**

**Sol:** Place value of 8 is 8 × 1,00,000 = 8,00,000 (Eight Lakh)

**(ii) 94,43,810**

**Sol:** Place value of 4 is 4 × 10,000 = 40,000 (Forty Thousand)

**2. Write down the numerals and place value of 5 in the numbers represented by the following number names.**

**(i) Forty Seven Lakh Thirty Eight Thousand Five Hundred Sixty One.**

**(ii) Nine Crore Eighty Two lakh Fifty Thousand Two Hundred Forty One**

**(iii) Nineteen Crore Fifty Seven Lakh Sixty Thousand Three Hundred Seventy**

**Sol: (i)** 47,38,561

Place value of 5 is 5 × 100 = 500 (Five Hundred)

**(iii)** 9,82,50,241

Place value of 5 is 5 × 10000 = 50,000 (Fifty Thousand)

**(iv)** 19,57,60,370

Place value of 5 is 5 × 10,00,000 = 50,00,000 (Fifty Lakhs)

## TRY THESE (Text book Page No.9)

**1. Identify the incorrect places of comma and rewrite correctly.**

| | | |
|---|---|---|
| **Indian System :** | **56,12,34,0,1,5;** | **9,90,03,2245** |
| **International System :** | **7,5613,4534;** | **30,30,304,040** |
| **Sol:** Indian System: | 56,12,34,015; | 99,00,32,245 |
| International System: | 756,134,534 | 3,030,304,040 |

## EXERCISE 1.1

**1. Fill in the blanks.**

(i) The smallest 7 digit number is _____ **[Ans: 10,00,000]**

(ii) The largest 8 digit number is _____ **[Ans: 9,99,99,999]**

(iii) The place value of 5 in 7005380 is _____ **[Ans: 5 × 1000 = 5000]**

(iv) The expanded form of the number 76,70,905 is _____

**[Ans: 7× 10,00,000 + 6 × 1,00,000 + 7 × 10,000 + 0 + 9 × 100 + 0 + 5 × 1 (or) 70,00,000 + 6,00,000 + 70,000 + 900+5]**

**2. Say True or False.**

(i) In the Indian System of Numeration the number 67999037 is written as 6,79,99,037. **[Ans: True]**

(ii) Successor of a one digit number is always a one digit number

**Hint :** 9 + 1 = 10 **[Ans: False]**

(iii) Predecessor of a 3-digit number is always a 3 or 4 digit number

**Hint :** 100 – 1 = 99 **[Ans: False]**

(iv) 88888 = 8 × 10000 + 8 × 100 + 8 × 10 + 8 × 1 **[Ans: False]**

**3. Complete the given order**

**Ten crore, crore, ten lakh, _____, _____, _____, _____, _____.**

**Sol:** Ten crore, Crore, Ten lakh, Lakh, Ten Thousand, Thousand, Hundred, Ten, One

**4. How many ten thousands are there in the smallest 6 digit number?**

**Sol:** Smallest six digit number is 1,00,000

| 1 lakh | 1 | 0 | 0 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|
| | L | TTH | TH | H | T | O |
| Ten Thousand | | 1 | 0 | 0 | 0 | 0 |

$$\frac{\text{One lakh}}{\text{Ten Thousand}} = \frac{1,00,000}{10,000} = 10$$

1 lakh = **10** Ten Thousands

**Another Method**

Lakh is only one place to the left of Ten thousand

∴ 1 lakh is 10 times ten thousand

1 lakh = **10** Ten Thousands

**5. Using the digits 5, 2, 0, 7, 3 form the largest 5 digit number and the smallest 5 digit number.**

**Sol:** We know that the place value increases from right to left.

[∴ Arranging the digits in ascending order from right to left we get the largest number]

Largest number is 75320

Smallest number is 20357

[∵ Reverse order of 75320 is 02357. It becomes four digit number 2357)

**6. Observe the commas and write down the place value of 7.**

**(i) 56,74,56,345 (ii) 567,456,345**

**Sol: (i)** 56,74,56,345

Place value of 7 is 7 × 10,00,000 = 70,00,000 = Seventy Lakhs.

**(ii)** 567,456,345

Place value of 7 is 7 × 1,000,000 = 7,000,000 = Seven Million.

Maths

**7.** **Write the following numbers in the International system by using commas.**
**(i) 347056 (ii) 7345671 (iii) 634567105 (iv) 1234567890**

***Sol.***

| | | Billion | Hundred Million | Ten Million | Million | Hundred Thousand | Ten Thousand | Thousand | Hundred | Ten | One | The Number in International System |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **(i)** | 347056 | | | | | 3 | 4 | 7 | 0 | 5 | 6 | 347,056 |
| **(ii)** | 7345671 | | | | 7 | 3 | 4 | 5 | 6 | 7 | 1 | 7,345,671 |
| **(iii)** | 634567105 | | 6 | 3 | 4 | 5 | 6 | 7 | 1 | 0 | 5 | 634,567,105 |
| **(iv)** | 1234567890 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1,234,567,890 |

**8.** **Write the largest six digit number and put commas in the Indian and the International Systems.**

***Sol.*** The largest six digit number is 999999

**Indian System**

| Lakh | Ten Thousand | Thousand | Hundred | Ten | One | The Number |
|---|---|---|---|---|---|---|
| 9 | 9 | 9 | 9 | 9 | 9 | 9,99,999 |

**International System**

| Hundred Thousand | Ten Thousand | Thousand | Hundred | Ten | One | The Number |
|---|---|---|---|---|---|---|
| 9 | 9 | 9 | 9 | 9 | 9 | 9,99,999 |

**9.** **Write the number names of the following numerals in the Indian System.**
**(i) 75,32,105 (ii) 9,75,63,453**

**Sol:** (i) 75,32,105

| TL | L | TTH | TH | H | T | O |
|---|---|---|---|---|---|---|
| 7 | 5 | 3 | 2 | 1 | 0 | 5 |

Seventy Five Lakhs Thirty Two Thousand One Hundred and Five

(ii) 9,75,63,453

| C | TL | L | TTH | TH | H | T | O |
|---|---|---|---|---|---|---|---|
| 9 | 7 | 5 | 6 | 3 | 4 | 5 | 3 |

Nine crores Seventy Five Lakhs Sixty Three Thousand Four Hundred and Fifty Three.

**10. Write the number names in words using the International System**

**(i) 345,678 (ii) 8,343,710 (iii) 103,456,789**

**Sol:** (i) 345,678

| Hundred Thousand | Ten Thousand | Thousand | Hundred | Ten | One |
|---|---|---|---|---|---|
| 3 | 4 | 5 | 6 | 7 | 8 |

Three Hundred and Forty Five Thousand Six Hundred and Seventy Eight

(ii) 8,343,710

| Million | Hundred Thousand | Ten Thousand | Thousand | Hundred | Ten | One |
|---|---|---|---|---|---|---|
| 8 | 3 | 4 | 3 | 7 | 1 | 0 |

Eight Million Three Hundred and Forty Three Thousand Seven Hundred and Ten.

(iii) 103,456,789

| Hundred Million | Ten Million | Million | Hundred Thousand | Ten Thousand | Thousand | Hundred | Ten | One |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

One Hundred Three Million Four Hundred Fifty Six Thousand Seven Hundred and Eighty Nine.

Maths

**11. Write the number name in numerals.**

**(i) Two crore thirty lakh fifty one thousand nine hundred eighty.**

**Sol:** 2,30,51,980

**(ii) Sixty six million three hundred forty five thousand twenty seven.**

**Sol:** 66,345,027

**(iii) Seven hundred eighty nine million, two hundred thirteen thousand four hundred fifty six.**

**Sol:** 789,213,456

**12. Tamil Nadu has about twenty six thousand three hundred forty five square kilometre of Forest land. Write the number mentioned in the statement in the Indian System.**

**Sol:** 26,345 Sq km.

**13. The number of employee in the Indian Railways is about 10 lakh. Write this in the International System of numeration.**

**Sol:** 1,000,000 (One Million)

# Objective Type Questions

**14.** **1 billion is equal to**
(a) 100 crore (b) 100 million (c) 100 lakh (d) 10000 lakh
**[Ans: (a) 100 crore]**

**15.** **The successor of 10 million is**
(a) 1000001 (b) 10000001 (c) 9999999 (d) 100001
**[Ans: (b) 10000001]**

**16.** **The difference between successor and predecessor of 99999 is**
(a) 90000 (b) 1 (c) 2 (d) 99001
**[Ans: (c) 2]**

**17.** **The expanded form of the number 6,70,905 is**
(a) $6 \times 10000 + 7 \times 1000 + 9 \times 100 + 5 \times 1$
(b) $6 \times 10000 + 7 \times 1000 + 0 \times 100 + 9 \times 100 + 0 \times 10 + 5 \times 1$
(c) $6 \times 1000000 + 7 \times 10000 + 0 \times 1000 + 9 \times 100 + 0 \times 10 + 5 \times 1$
(d) $6 \times 100000 + 7 \times 10000 + 0 \times 1000 + 9 \times 100 + 0 \times 10 + 5 \times 1$
**[Ans: (d) $6 \times 100000 + 7 \times 10000 + 0 \times 1000 + 9 \times 100 + 0 \times 10 + 5 \times 1$]**

# ADDITIONAL QUESTIONS

**Answer the following questions.**

**1.** **How many thousand are there in 1 lakhs?**
**Sol:** $\frac{1,00,0000}{1000}$ = 100 Thousands

**2.** **The expanded form of the number 6,00,001 is given as $6 \times 100000 + 1 \times 1$. Can you write like this Comment.**
**Sol:** Yes. We can write the expansion of the number 600001 as $6 \times 100000 + 1 \times 1$.
Because $6 \times 100000 + 1 \times 1 = 600000 + 1 = 600001$

**3.** **Write the relation between Largest two digit number and Smallest three digit number.**
**Sol:** Largest two digit number + 1 = Smallest three digit number.
$99 + 1 = 100$

**4.** **Name the property being illustrated in each of the cases.**
**i)** **$(30 + 20) + 10 = 30 + (20 + 10)$** **ii)** **$10 \times 35 = (10 \times 30) + (10 \times 5)$**
**Sol:** (i) Associativity (ii) Distribution of multiplication over addition.

## TRY THESE (Text book Page No.13)

**1.** **Write the numbers in ascending order : 688, 9, 23005, 50, 7500.**
**Sol:** Ascending order : 9, 50, 688,7500, 23005 ; $9 < 50 < 688 < 7500 < 23005$

**2.** **Find the least and greatest among the numbers : 478, 98, 6348, 3, 6007, 50935**
**Sol:** The lease number is 3.
The greatest number is 50935

## TRY THESE (Text book Page No.14)

**Compare the two numbers and put <, > and = using place value chart.**

| | |
|---|---|
| 15475 | 3214 |
| 73204 | 973561 |
| 8975430 | 8975430 |
| 1899799 | 1899799 |

**Sol: (i) 15475, 3214**

Comparing the place value using place value chart.

| Place Value | TTH | TH | H | T | O |
|---|---|---|---|---|---|
| First Number | – | 3 | 2 | 1 | 4 |
| Second Number | 1 | 5 | 4 | 7 | 5 |

Comparing the place values from left we have **15475 > 3214**

**(ii) 73204, 973561**

Place value chart

| Place Value | L | TTH | TH | H | T | O |
|---|---|---|---|---|---|---|
| First Number | – | 7 | 3 | 2 | 0 | 4 |
| Second Number | 9 | 7 | 3 | 5 | 6 | 1 |

Comparing the digits of two numbers **73204 < 973561**

**(iii) 8975430, 8975430**

| Place Value | TL | L | TTH | TH | H | T | O |
|---|---|---|---|---|---|---|---|
| First Number | 8 | 9 | 7 | 5 | 4 | 3 | 0 |
| Second Number | 8 | 9 | 7 | 5 | 4 | 3 | 0 |

From the place value chart comparing the digits from left 8 = 8, 9 = 9, 7 = 7, 5 = 5 4 = 4, 3 = 3, 0 = 0

∴ **8975430 = 8975430**

**(iv) 1899799, 1899799.**

| Place Value | TL | L | TTH | TH | H | T | O |
|---|---|---|---|---|---|---|---|
| First Number | 1 | 8 | 9 | 9 | 7 | 9 | 9 |
| Second Number | 1 | 8 | 9 | 9 | 7 | 9 | 9 |

From the place value chart comparing the digits of the two numbers from the highest place value we have 1 = 1, 8 = 8, 9 = 9, 9 = 9, 7 = 7, 9 = 9, 9 = 9

∴ **1899799 = 1899799**

**Note :** The number $10^{100}$ is called googol. The number $10^{googol} = 10^{(10^{100})}$ is called googolplex.

## TRY THESE (Text book Page No.16)

The area in sq.km of 4 Indian states are given below

| States | Area (Sq.Km) |
|---|---|
| TamilNadu | 1,30,058 |
| Kerala | 38,863 |

| | |
|---|---|
| Karnataka | 1,91,791 |
| Andhra Pradesh | 1,62,968 |

**List the areas of the above 4 Indian States in the ascending and the descending order.**

**Sol:** We can prepare place value chart

| States / Place value | | L | TTH | TH | H | T | O |
|---|---|---|---|---|---|---|---|
| **Tamilnadu** | | 1 | 3 | 0 | 0 | 5 | 8 |
| **Kerala** | | – | 3 | 8 | 8 | 6 | 3 |
| **Karnataka** | | 1 | 9 | 1 | 7 | 9 | 1 |
| **Andhra Pradesh** | | 1 | 6 | 2 | 9 | 6 | 8 |

5 digit number 38,863 is the least value.
Comparing digits of other 6 digit numbers from left. 1 = 1 = 1, 3 < 6 < 9
Ascending order = 38,863 < 1,30,058 < 1,62,968 < 1,91,791
Kerala < Tamilnadu < Andhra Pradesh < Karnataka
Descending order = 1,91,791 > 1,62,968 > 1,30,058 > 38,863
Karnataka > Andhra Pradesh > Tamilnadu > Kerala

## TRY THESE (Text book Page No.17)

**1. In the same way try placing the digit 4 in thousandth place and get six different 4-digit numbers. Also make different 4-digit numbers by fixing 8 and 5 in the thousandth place.**

**Sol:** (i)

| TH | H | T | O |
|---|---|---|---|
| 4 | 8 | 5 | 9 |
| 4 | 5 | 8 | 9 |
| 4 | 8 | 9 | 5 |
| 4 | 5 | 9 | 8 |
| 4 | 9 | 5 | 8 |
| 4 | 9 | 8 | 5 |

(ii)

| TH | H | T | O |
|---|---|---|---|
| 8 | 9 | 4 | 5 |
| 8 | 4 | 9 | 5 |
| 8 | 0 | 5 | 4 |
| 8 | 9 | 5 | 4 |
| 8 | 5 | 4 | 9 |
| 8 | 4 | 5 | 9 |

(iii)

| TH | H | T | O |
|---|---|---|---|
| 5 | 4 | 9 | 8 |
| 5 | 4 | 8 | 9 |
| 5 | 9 | 8 | 4 |
| 5 | 8 | 9 | 4 |
| 5 | 9 | 4 | 8 |
| 5 | 8 | 4 | 9 |

**2. In the same way make different 4 digit numbers by exchanging the digits and check every time whether the number made is small or big.**

**Sol:**

| TH | H | T | O |
|---|---|---|---|
| 1 | 4 | 3 | 2 |
| 4 | 3 | 2 | 1 |
| 3 | 2 | 1 | 4 |
| 2 | 1 | 4 | 3 |

1432 < 4321
4321 > 3214
3214 > 2143


**3. Pedometer used in walking practice contains 5 digit number. What could be the largest measure?**

**Sol:** 99,999

## EXERCISE 1.2

**1. Fill in the blanks with > or < or =**

**Ans:** (i) 48792 < 48972

**Hint :** 7 < 9 [Hint: Open side can hold large number]

(ii) 1248654 > 1246854

**Hint :** 8 > 6

(iii) 658794 = 658794

**2. Say True or False.**

(i) The difference between the smallest number of seven digits and the largest number of six digits is 10.

**Hint :** 1000000 – 999999 = 1 **[Ans: False]**

(ii) The largest 4 digit number formed by the digits 8, 6, 0, 9 using each digit only once is 9086

**Hint :** 9999 – 999 = 9000 **[Ans: False]**

(iii) The total number of 4 digit number is 9000 **[Ans: True]**

**3. Of the numbers 1386787215, 137698890, 86720560, which one is the largest? Which one is the smallest?**

**Sol:** We know that the number with more digits is greater.

∴ Greatest number is 1386787215

Smallest number is 86720560

**4. Arrange the following numbers in the descending order:**
**128435, 10835, 21354, 6348, 25840**

**Sol:** Place value chart is given by

| Qn. No. | Given Number | L | T TH | TH | H | T | O |
|---|---|---|---|---|---|---|---|
| (i) | 128435 | 1 | 2 | 8 | 4 | 3 | 5 |
| (ii) | 10835 | | 1 | 0 | 8 | 3 | 5 |
| (iii) | 21354 | | 2 | 1 | 3 | 5 | 4 |
| (iv) | 6348 | | | 6 | 3 | 4 | 8 |
| (v) | 25840 | | 2 | 5 | 8 | 4 | 0 |

⇒ The number with more digits is the greater number

**Step 1:** ∴ 128435 is the larger number and 6348 is the least number

**Step 2:** For the remaining 5 digit numbers we can compare the left most digits and find
25840 > 21354 > 10835

∴ The descending order:
128435 > 25840 > 21354 > 10835 > 6348

**5. Write any eight digit number with 6 in ten lakhs place and 9 in ten thousandth place.**

**Sol:** **Step (i):** Preparing place value chart with 8 digits 6 in ten lakh place and 9 in Ten thousand place

**Step (ii):** Fill the other places with any of the numbers

| C | TL | L | T TH | TH | H | T | O |
|---|---|---|---|---|---|---|---|
| 5 | 6 | 8 | 9 | 7 | 4 | 3 | 2 |

∴ The number may be 56897432. Similarly we can write many numbers.

**6. Rajan writes a 3-digit number, using the digits 4, 7 and 9. What are the possible numbers he can write?**

**Sol:** The given digits are 4, 7 and 9.

Maths

| H | T | O |
|---|---|---|
| 9 | 7 | 4 |
| 9 | 4 | 7 |
| 7 | 9 | 4 |
| 7 | 4 | 9 |
| 4 | 7 | 9 |
| 4 | 9 | 7 |

Rajan can write 974, 947, 794, 749, 479, 497

**7. The password to access my ATM card includes the digits 9, 4, 6 and 8. It is the smallest 4 digit even number. Find the password of my ATM card.**

**Sol:** Given digits are 9, 4, 6 and 8. Smallest number with these digits is 4689

Given that it is an even number.

$\therefore$ It may be 4698. So password of ATM card is 4698.

**8. Postal Index Number consists of six digits The first three digits are 6, 3 and 1. Make the largest and the smallest Postal Index Number by using the digits 0, 3 and 6 each only once.**

**Sol:** Given PIN consists of six digits. First three digits are 6, 3, and 1.

The digits 0, 3 and 6 to be used only once, in the remaining places.

| | L | T TH | TH | H | T | O |
|---|---|---|---|---|---|---|
| Largest No. | 6 | 3 | 1 | 06 | 03 | 0 |
| Smallest No. | 6 | 3 | 1 | 0 | 03 | 06 |

Largest Postal Index Number: 631630

Smallest Postal Index Number: 631036

**9. The height (in metres) of the mountains in Tamil Nadu as follows:**

| Sl. No | Mountains | Height (in metres) |
|---|---|---|
| 1 | Doddabetta | 2637 |
| 2 | Mahendragiri | 1647 |
| 3 | Anaimudi | 2695 |
| 4 | Velliangiri | 1778 |

**(i) Which is the highest mountain listed above?**

**(ii) Order the mountains from the highest to lowest.**

**(iii) What is the difference between the heights of the mountains Anaimudi and Mahendragiri?**

**Sol:** Arranging the numbers in place value chart.

| Mountains | TH | H | T | O |
|---|---|---|---|---|
| Doddabetta | 2 | 6 | 3 | 7 |
| Mahendragiri | 1 | 6 | 4 | 7 |
| Anaimudi | 2 | 6 | 9 | 5 |
| Velliangiri | 1 | 7 | 7 | 8 |

(i) Highest mountain is Anaimudi [Comparing left most digits]

(ii) From the above chart.
In thousands place, Doddabetta and Anaimudi have greater value 2.
Comparing digits of 2637 and 2695
$2 = 2, 6 = 6, 3 < 9$.
$\therefore$ $2637 < 2695$
Again comparing the digits of 1647 and 1778
$1 = 1, 6 < 7$
$\therefore$ $1647 < 1778$.
$\therefore$ The required order is $2695 > 2637 > 1778 > 1647$.
$\therefore$ Anaimudi > Doddabetta > Veliangiri > Mahendragiri

(iii) The height of Anaimudi mountain = 2695 m
The height of Mahendragiri mountain = 1647 m
$\therefore$ The Difference = 1048 m

# Objective Type Questions

**10. Which list of numbers is in order from the smallest to the largest?**
(a) 1468, 1486, 1484 (b) 2345, 2435, 2235
(c) 134205, 134208, 154203 (d) 383553, 383548, 383642
**[Ans: (c) 134205, 134208, 154203]**

**11. The Arabian sea has an area of 1491000 square miles. This area lies between which numbers?**
(a) 1489000 and 1492540 (b) 1489000 and 1490540
(c) 1490000 and 1490100 (c) 1480000 and 1490000
**Hint :** 1489000 < 1491000 < 1492540 **[Ans: (a) 1489000 and 1492540]**

**12. The chart at below shows the number of newspapers sold as per Indian Readership Survey in 2018. Which could be the missing number in the table?**

| Name of the News Paper | Ranking | Sold (in Lakh) |
|---|---|---|
| A | 1 | 70 |
| B | 2 | 50 |
| C | 3 | ? |
| D | 4 | 10 |

(a) 8 (b) 52 (c) 77 (d) 26
**Hint :** 50 > 26 > 10 **[Ans: (d) 26]**

# ADDITIONAL QUESTIONS

**Fill in the blanks.**

**1.** 10 crore _____ **[Ans: 100 million]**

**Answer the following questions.**

**1.** The heights of five boys in class VI are 135, 141, 129, 132, 145 (in centimeters) in height. Arrange their heights as how they stand in the assembly?

**Sol:** 129 cm < 132 cm < 135 cm < 141 cm < 145 cm

**2.** Arrange in descending order.
8461, 7535, 2943, 6214
**Sol:** 8461 > 7535 > 6214 > 2943

**3.** Find the numbers between 572634 and 562634 which is approximated to ten thousands place.
**Sol:** 562634, < 570000, < 572634

## Exercise 1.3

**1. Fill in the blanks**

(i) If Arulmozhi saves ₹12 per day then she saves ₹ _____ in 30 days.
**Hint :** 12 × 30 = ₹360 **[Ans: ₹ 360]**

(ii) If a person 'A' earns ₹ 1800 in 12 days, then he earns ₹ _____ in a day.
**Hint :** $\frac{1800}{12} = 150$ **[Ans: ₹ 150]**

(iii) 45 ÷ (7 + 8) – 2 = _____.
**Hint :** 45 ÷ 15 – 2 = 3 – 2 = 1 **[Ans: 1]**

**2. Say True or False**

(i) 3 + 9 × 8 = 96
**Hint :** 3 + 72 = 75 **[Ans: False]**

(ii) 7 × 20 – 4 = 136
**Hint :** 140 – 4 = 136 **[Ans: True]**

(iii) 40 + (56 – 6) ÷ 2 = 45
**Hint :** 40 + 50 ÷ 2 = 40 + 25 = 65 **[Ans: False]**

**3. The number of people who visited the Public Library for the past 5 months were 1200, 2000, 2450, 3060 and 3200 respectively. How many people visited the library in the last 5 months.**

**Sol:** People visited the library for past 5 months = 1200 + 2000 + 2450 + 3060 + 3200
∴ Total people visited = 11910

**4. Cheran had a bank savings of ₹ 7,50,250. He withdrew ₹ 5,34,500 for educational purpose. Find the balance amount in his account.**

**Sol:**
Bank Savings of Cheran = ₹ 7,50,250
Withdrew Amount = ₹ 5,34,500
∴ Balance Amount = ₹ 2,15,750

**5. In a cycle factory, 1560 bicycles were manufactured every day. Find the number of bicycles manufactured in 25 days.**

**Sol:**
Number of bicycles manufactured in one day = 1560
∴ Number of bicycles manufactured in 25 days = 1560 × 25
= 39,000
Number of bicycles manufactured in 25 days = 39,000

```
  1560
×   25
 7800
 3120
39,000
```

**6. ₹ 62,500 was equally distributed as a New Year bonus for 25 employees of a company. How much did each receive?**

**Sol:** Total amount distributed = ₹ 62500

Number of employees received bonus = 25

∴ Amount received by one employee = 62500 ÷ 25 = 2,500.

Each employee received ₹ 2,500

**7. Simplify the following numerical expression:**

(i) (10 + 17) ÷ 3

(ii) 12 – [3 – {6 – (5 – 1)}]

(iii) 100 + 8 ÷ 2 + {(3 × 2) – 6 ÷ 2}

**Sol:** (i) (10 + 17) ÷ 3 (Given)

= 27 ÷ 3 (Bracket completed first)

= 9 (÷ completed)

∴ (10 + 17) ÷ 3 = 9

(ii) 12 – [3 –{6 – (5 – 1)}] (Given)

= 12 – [3 –{6 – 4}] (Innermost bracket completed first)

= 12 – [3 – 2] [Again Inner bracket completed second]

= 12 – 1 (Bracket completed third)

= 11 (– completed)

12 – [3 – {6 – (5 – 1)}] = 11

(iii) 100 + 8 ÷ 2 + {(3 × 2) – 6 ÷ 2} (Given)

= 100 + 8 ÷ 2 + {6 – 6 ÷ 2} (Innermost bracket completed first)

= 100 + 8 ÷ 2 + {6 – 3} (To remove the next bracket ÷ within the bar completed second)

= 100 + 8 ÷ 2 + 3 (bar completed third)

= 100 + 4 + 3 (÷ completed fourth)

= 107 (+ completed)

100 + 8 ÷ 2 + {(3 × 2) – 6 ÷ 2} = 107

Maths

## Objective Type Questions

**8. The value of 3 + 5 – 7 × 1 is _____.**

(a) 5 (b) 7 (c) 8 (d) 1.

**Hint :** 3 + 5 – 7 × 1 = 3 + 5 – 7 = 8 – 7 = 1 **[Ans: (d) 1]**

**9. The value of 24 ÷ {8 – (3 × 2)} is**

(a) 0 (b) 12 (c) 3 (d) 4

**Hint :** 24 ÷ {8– 3 × 2} = 24 ÷ {8 – 6} = 24 ÷ 2 = 12 **[Ans: (b) 12]**

**10. Use BIDMAS and put the correct operator in the box.**

2 ☐ 6 – 12 ÷ (4 + 2) = 10

(a) + (b) – (c) × (d) ÷ **[Ans: (c) ×]**

**Hint :** 2 ☐ 6 – 12 ÷ 6 = 10

⇒ 2 ☐ 6 – 2 = 10

⇒ 2 × 6 – 2 = 10

# ADDITIONAL QUESTIONS

**1. Evaluate the following :**

(a) $44 \div 2 + (7 + 80 \div 10) - 14 + 23$

(b) $17 \times 6 - 4 - 2 + 20 - (22 + 18)$

**Sol:** (a) $44 \div 2 + (7 + 80 \div 10) - 14 + 23$ (Given)

$= 44 \div 2 + (7 + 8) - 14 + 23$ (To complete the bracket ÷ done first)

$= 44 \div 2 + 15 - 14 + 23$ (Bracket completed second)

$= 22 + 15 - 14 + 23$ (÷ completed third)

$= 37 - 37$ (+ completed fourth)

$= 0$ (– completed last)

$\therefore\ 44 \div 2 + (7 + 80 \div 10) - 14 + 23 = 0.$

(b) $17 \times 6 - 4 - 2 + 20 - (22 + 18)$ (Given)

$= 17 \times 6 - 4 - 2 + 20 - 40$ (Bracket completed first)

$= 102 - 4 - 2 + 20 - 40$ (× completed second)

$= 102 - 4 - 22 - 40$ (+ completed third)

$= 98 - 22 - 40$ (÷ completed one by one)

$= 76 - 40$

$= 36$

$\therefore\ 17 \times 6 - 4 - 2 + 20 - (22 + 18) = 36$

**2. India's population has been steadily increasing from 439 millions in 1961 to 1028 millions in 2001. Find the total increase in population from 1961 to 2001. Write the increase in population in Indian system of Numeration using commas suitably.**

**Sol:** Population of India in 1961 = 439 millions = 439,000,000

Population of India in 2001 = 1028 millions = 1,028,000,000

Increase in population from 1961 to 2001 = Population in 2001 – Population in 1961

= 1028000000 – 439000000

= 589000000 = 589 million.

Increase in population in Indian System = 58,90,00,000

## TRY THESE

(Text book Page No.25)

**1. Round off the following numbers to the nearest ten**

**(i) 57 (ii) 189 (iii) 3,956 (iv) 57,312**

**Sol: (i) 57**

Given number 57

Place value to be rounded off is ten.

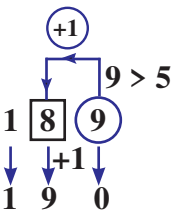
Digit in tens place is 5.

Digit to the right is 7 > 5

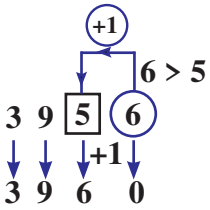
$\therefore$ Adding 1 to 5 $\Rightarrow 1 + 5 = 6$

changing the digits to the right of 6 to zero $\Rightarrow 60$

$\therefore$ rounded off number is 60.

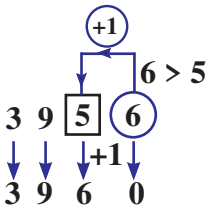


**(ii) 189**




Place value to be rounded off is ten
Digit is ten place is 8
Digit to the right is 9 > 5
∴ Adding 1 to 8 ⇒ 1 + 8 = 9.
changing the digits to the right of 19 to zero
⇒ 190
Required rounded off number is 190

**(iii) 3956**




Place value to be rounded off is ten.
Digit in tens place is 5
Digit to the right is 6 > 5
∴ Adding 1 to 5 ⇒ 1 + 5 = 6
Changing the right digits of 396 to zero ⇒ 3960
Required rounded off number is 3960.

**(iv) 57312**

Place value to be rounded off is ten.
Digit in tens place is 1
Digit to the right is 2 < 5
∴ Leaving the number 2 as it is changing the digits to the right of 5731 to zero
⇒ 57310. The rounded of number is 57310

**2. Round off the following numbers to the nearest ten, hundred and thousand.**

**(i) 9,34,678 (ii) 73,43,489 (iii) 17,98,45,673**

**Sol: (i) 9,34,678**

Nearest Tens: 9,34,680
Nearest Hundreds: 9,34,700
Nearest Thousands: 9,35,000

**(ii) 73,43,489**

Nearest Tens: 73,43,490
Nearest Hundreds: 73,43,500
Nearest Thousands: 73,43,000

**(iii) 17,98,45,673**

Nearest Tens: 17,98,45,670
Nearest Hundreds: 17,98,45,700
Nearest Thousands: 17,98,46,000

**3. The tallest mountain in the world Mount Everest, located in Nepal is 8,848 m high. Its height can be rounded off to the nearest thousands as _____**

**[Ans: 9000 m.]**

## TRY THESE

**(Text book Page No.27)**

**1. Estimate the sum and difference:**
**8457 and 4573**

**Sol:** (a) Sum 8457 ⇒ 8000
4573 ⇒ 5000
Sum = 13,000

(b) Difference

$8457 \Rightarrow 8000$

$4573 \Rightarrow \underline{5000}$

Difference = 3,000

**2. Estimate the product 39 × 53**

**Sol:** $39 \Rightarrow 40$

$53 \Rightarrow 50$

Product $40 \times 50 = 2000$

**3. Estimate the quotient 5546 ÷ 524**

**Sol:** $5546 \Rightarrow 5500$

$524 \Rightarrow 500$

Quotient is 11

$$\begin{array}{r|l} & 11 \\ \hline 500 & 5500 \\ & 500 \\ \hline & 500 \\ & 500 \\ \hline & 0 \end{array}$$

## Exercise 1.4

**1. Fill in the blanks.**

(i) The nearest 100 of 843 is _____.

**Hint :** The digit in tens place is $4 < 5$. **[Ans: 800]**

(ii) The nearest 1000 of 756 is _____.

**Hint :** The digit in hundred place is $7 \geq 5$ **[Ans: 1000]**

(iii) The nearest 10,000 of 85654 is _____.

**Hint :** The digit in thousand place is $5 \geq 5$. **[Ans: 90,000]**

**2. Say True or False**

**(i) 8567 is rounded off as 8600 to the nearest 10.**

**Hint :** In ones place the digit is $7 \geq 5$. So 8580 **[Ans: False]**

**(ii) 139 is rounded off as 100 to the nearest 100.**

**Hint :** In tens place we have $3 < 5$. So 100 **[Ans: True]**

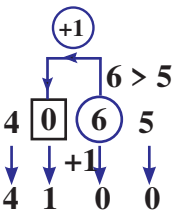
**(iii) 1,70,51,972 is rounded off as 1,70,00,000 to the nearest lakh.**

**Hint :** In ten thousand place the digit is $5 \geq 5$. So 1,71,000,000 **[Ans: False]**

**3. Round off the following to the given nearest place.**

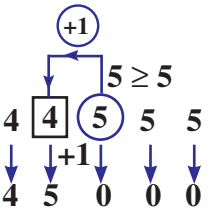
**(i) 4065; hundred**

**Sol:** We have to round off 4065 to hundreds
The place value is hundred
The digit in hundreds place is 0
The digit to the right is $6 > 5$
Adding 1 to $0 \Rightarrow 0 + 1 = 1$
Changing the digits to the right of 41 to zeros
$4065 \simeq 4100 \Rightarrow 4100$



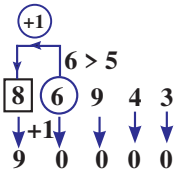

**(ii) 44,555; thousand**

To round off 44555 to thousands
The digit in the thousands place is 4
digit to the right is 5 = 5.
∴ Adding 1 to the thousand place value digit 4



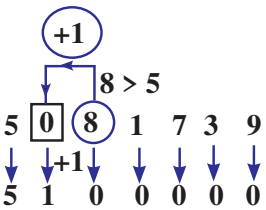
4 + 1 = 5
Changing the digits to the right of 45 to zeros we get 45000
44555 ≃ 45000

**(iii) 86943; ten thousand**



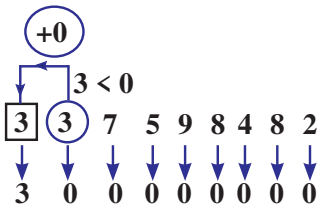

To round off 86,943 to ten thousand
The digit in ten thousands place is 8
The digit to the right is 6 > 5
Adding 1 to 8 ⇒ 8 + 1 = 9.
Changing the digits to the right of 9 to zeroes we get 90,000
∴ 86943 ≃ 90,000

**(iv) 50,81,739; lakh**




To round off 5081739 to lakhs
The digit in the lakhs place is 0
The digit to the right is 8 > 5
∴ Adding 1 to 0 ⇒ 1 + 0 = 1
Changing the digits right off 51 to zeros
We get 51,00,000
∴ 5081739 ≃ 51,00,000

**(v) 33,75,98,482; Ten crore**




To round off 337598482 to ten crore
The digit in the ten crores place is 3
The digit to the right is 3 < 0
∴ The digit in ten crore place remains the same 3.
Changing the digit to the right of 3 zeros we get 30,00,00,000
∴ 33,75,98,482 ≃ 30,00,00,000

**4. Estimate the sum of 157826 and 32469 rounded off to the nearest ten thousand.**

**Sol:**

| | | |
|---|---|---|
| 157,826 | ⇒ | 1,60,000 |
| 32,469 | ⇒ | 30,000 |
| 1,90,295 | ⇒ | 1,90,000 |

**5. Estimate by rounding off each number to the nearest hundred.**

**(i) 8074 + 4178**

**Sol:**

| | | |
|---|---|---|
| 8074 | ⇒ | 8100 |
| 4178 | ⇒ | 4200 |
| | | 12,300 |

**(ii) 1768977 + 130589**

| | | |
|---|---|---|
| 17,68,977 | ⇒ | 1769000 |
| 1,30,589 | ⇒ | 130600 |
| | | 18,99,600 |

**6.** **The population of a city was 43,43,645 in the year 2001 and 46,81,087 in the year 2011. Estimate the increase in population by rounding off to the nearest thousands.**

**Sol:** Population in the year 2011 is 46,81,087 ⇒ 46,81,000
Population in the year 2011 is 43,43,645 ⇒ 43,44,000
∴ Increase in Population = 3,37,000

## Objective Type Questions

**7.** **The number which on rounding off to nearest thousands given 11000 is**

(a) 10345 (b) 10855 (c) 11799 (d) 10056

**Hint :** In 10855, the digit in hundred place is 8 ≥ 5. So 11000 **[Ans: (b)] 10855**

**8.** **The estimation to the nearest hundred of 76812 is**

(a) 77000 (b) 76000 (c) 76800 (d) 76900

**Hint :** In tens place the digit is 1 < 5, So 76800 **[Ans: (c) 76800]**

**9.** **The number 9785764 is rounded off to nearest lakh as**

(a) 9800000 (b) 9786000 (c) 9795600 (d) 9795000

**Hint :** In ten thousand place, the digit is 8 5. So 9800000 **[Ans: (a) 9800000]**

**10.** **The estimated difference of 167826 and 2765 rounded off to the nearest thousand is**

(a) 180000 (b) 165000 (c) 140000 (d) 155000

**Hint :** 167826 = 168000, 2765 = 3000 **[Ans: (b) 165000]**

## ADDITIONAL QUESTIONS

**1.** **Estimate the following to the nearest hundreds**

**(a) 439 + 334 + 4317** **(b) 1,08,734 – 47,599**
**(c) 8325 – 491** **(d) 4,89,348 – 48,365**

**Sol:** **(a) 439 + 334 + 4317**
439 ⇒ 400
334 ⇒ 300
4317 ⇒ 4300
Sum 5,000

**(b) 1,08,734 – 47,599**
1,08,734 ⇒ 1,08,700
47,599 ⇒ 47,600
Difference = 61,100

**(c) 8325 – 491**
8325 ⇒ 8300
491 ⇒ 500
Difference ⇒ 7,800

**(d) 4,89,348 – 48,365**
4,89,348 ⇒ 4,89,300
48,365 ⇒ 48,400
Difference = 4,40,900

## TRY THESE (Text book Page No.29)

✦ **Find the value of 6 + 3 + 8 and 3 + 6 + 8**
**(i) Are they same?**
**(ii) Is there any other way of arranging these three numbers?**

**Sol:** 6 + 3 + 8 = 3 + 6 + 8 = 17
(i) Yes, 6 + 3 + 8 = 3 + 6 + 8 = 17, Both are same
(ii) Yes, we can arrange these numbers as 3 + 8 + 6 = 8 + 6 + 3 = 8 + 3 + 6 = 6 + 8 + 3

✦ **Find the value of 5 × 2 × 6 and 2 × 5 × 6**
**(i) Are they same?**
**(ii) Is there any other way of arranging these three numbers?**

**Sol:** 5 × 2 × 6 = 2 × 5 × 6 = 60
(i) Yes, they are the same
(ii) They can be arranged as 2 × 6 × 5 = 6 × 5 × 2 = 5 × 6 × 2 = 6 × 2 × 5.

✦ **Is 7– 5 the same as 5–7? Why**

**Sol:** 7 – 5 ≠ 5 – 7.
Because subtraction is not commutative [∵ 7 – 5 = 2; 5 – 7 = – 2]

✦ **What is the value of (15 – 8) – 6? Is it the same as 15 – (8 – 6)? Why?**

**Sol:** (15 – 8) – 6 = 7 – 6 = 1
∴ (15 – 8) – 6 = 1
It is not same as 15 – (8 – 6).
∵ 15 – (8 – 6) = 15 – 2 = 13.
∴ (15 – 8) – 6 ≠ 15 – (8 – 6)

✦ **What is 15 ÷ 5? Is it the same as 5 ÷ 15? Why?**

**Sol:** (i) 15 ÷ 5 = 3
(ii) 15 ÷ 5 ≠ 5 ÷ 15
(iii) Division is not commutative for whole numbers.

✦ **What is the value of (100 ÷ 10) ÷ 5? Is it the same as 100 ÷ (10 ÷ 5)? Why?**

**Sol:** (i) (100 ÷ 10) ÷ 5 = 10 ÷ 5 = 2
(ii) 100 ÷ (10 ÷ 5) ≠ (100 ÷ 10) ÷ 5
(iii) Because division of whole numbers are not associative.
Also 100 ÷ (10 ÷ 5) = 100 ÷ 2 = 50
But (100 ÷ 10) ÷ 5 = 10 ÷ 5 = 2 = 50 ≠ 2
(i. e) (100 ÷ 10) ÷ 5 ≠ 100 ÷ (10 ÷ 5)

## TRY THESE (Text book Page No.30, 32, 33)

✦ **Use at least three different pairs of whole numbers to verify that subtraction is not commutative**

**Sol:** **(a) 7 and 20**
20 – 7 ≠ 7 – 20

**(b) 300 and 100**
$300 - 100 \neq 100 - 300$

**(c) 60 and 5**
$60 - 5 \neq 5 - 60$

✦ **Is $10 \div 5$ the same as $5 \div 10$? Justify it by taking two more combinations of numbers**

**Sol:** $10 \div 5 \neq 5 \div 10$

**Example:** (a) $20 \div 10 \neq 10 \div 20$ ie. $2 \neq \frac{1}{2}$ ; (b) $100 \div 50 \neq 50 \div 100$ ie. $2 \neq \frac{1}{2}$

**Complete the following tables.**

(i)

| | | | | |
|---|---|---|---|---|
| 9 | + | 0 | = | 9 |
| 7 | + | 0 | = | **7** |
| 0 | + | 17 | = | 17 |
| 0 | + | **37** | = | 37 |
| 0 | + | **Any Number** | = | **The same Number** |

(ii)

| | | | | |
|---|---|---|---|---|
| 11 | × | 1 | = | 11 |
| 1 | × | 55 | = | 55 |
| 1 | × | 12 | = | **12** |
| 1 | × | **100** | = | 100 |
| 1 | × | **Any Number** | = | **The same Number** |

**Complete the Table.**

| | | | | |
|---|---|---|---|---|
| 6 | + | 8 | = | 14, a Natural Number |
| 4 | + | 5 | = | 9, a Natural Number |
| 4 | × | 5 | = | 20, a Natural Number |
| 6 | × | 8 | = | 48, a Natural Number |
| 100 | + | 10 | = | 110, a Natural Number |
| 20 | + | 30 | = | 50, a Natural Number |
| 20 | × | 30 | = | 600, a Natural Number |
| 100 | × | 10 | = | 1000, a Natural Number |
| 6 | + | 8 | = | 14, a Whole Number |
| 4 | + | 5 | = | 9, a Whole Number |
| 15 | × | 0 | = | 0, a Whole Number |
| 11 | × | 2 | = | 22, a Whole Number |
| 100 | + | 10 | = | 110, a Whole Number |
| 20 | + | 30 | = | 50, a Whole Number |
| 75 | × | 0 | = | 0, a Whole Number |
| 80 | × | 1 | = | 80, a Whole Number |

## Exercise 1.5

**1. Fill in the blanks.**

(i) The difference between the smallest natural number and the smallest whole number is _____

**Hint :** $1 - 0 = 1$ **[Ans: 1]**

(ii) $17 \times$ _____ $= 34 \times 17$ **[Ans: 34]**

(iii) When _____ is added to a number, it remains the same. **[Ans: 0]**

(iv) Division by _____ is not defined. **[Ans: 0]**

(v) Multiplication by _____ leaves a number unchanged. **[Ans: 1]**

**2. Say True or False**

(i) 0 is the identity for multiplication of whole numbers.

**Hint :** 1 is the identity for multiplication **[Ans: False]**

(ii) Sum of two whole numbers is always less than their product.

**Hint :** $1 + 1 = 2 > 1 \times 1 = 1$ **[Ans: False]**

(iii) Both addition and multiplication are associative for whole numbers. **[Ans: True]**

(iv) Both addition and multiplication are commutative for whole numbers. **[Ans: True]**

(v) Multiplication is distributive over addition for whole numbers. **[Ans: True]**

**3. Name the property being illustrated in each of the cases given below**

(i) $75 + 34 = 34 + 75$

**Ans:** Addition is commutative

(ii) $(12 \times 4) \times 8 = 12 \times (4 \times 8)$

**Ans:** Multiplication is associative

(iii) $50 + 0 = 50$

**Ans:** 0 is the additive identity

(iv) $50 \times 1 = 50$

**Ans:** 1 is the multiplicative identity.

(v) $50 \times 42 = 50 \times 40 + 50 \times 2$

**Ans:** Distributivity of multiplication over addition

**4. Use the properties of whole numbers and simplify.**

**(i) $50 \times 102$**

**Sol:** Using distributive property of multiplication over addition.

$50 \times 102 = 50 \times 10 + 50 \times 2 = 5000 + 100 = 5100$

$50 \times 102 = 5100$

**(ii) $500 \times 689 - 500 \times 89$**

**Sol:** Using distributivity of multiplication over subtraction $500 \times 689 - 500 \times 89$

$= 500 \times (689 - 89) = 500 \times 600 = 300000$

$500 \times 689 - 500 \times 89 = 3,00,000$

**(iii) $4 \times 132 \times 25$**

**Sol:** We know that multiplication is associative

$\therefore \quad 4 \times 132 \times 25 = 4 \times 25 \times 132 = 100 \times 132 = 13200$

$4 \times 132 \times 25 = 13200$

**(iv) $196 + 34 + 104$**

**Sol:** $196 + 34 + 104 = 196 + 104 + 34 = 300 + 34 = 334$ [$\because$ Addition is associative]

$196 + 34 + 104 = 334$

## Objective Type Questions

**5. $(53 + 49) \times 0$ is**

(a) 102 (b) 0 (c) 1 (d) $53 + 49 + 0$

**Hint :** $53 \times 0 + 49 \times 0 = 0 + 0 = 0$ **[Ans: (b) 0]**

**6. $\frac{59}{1}$ is**

(a) 1 (b) 0 (c) $\frac{1}{59}$ (d) 59 **[Ans: (d) 59]**

**7.** **The product of a non-zero whole number and its successor is always**
(a) an even number (b) an odd number (c) zero (d) none of these
**[Ans: (a) an even number]**

**8.** **The whole number that does not have a predecessor is**
(a) 10 (b) 0 (c) 1 (d) none of these
**Hint :** 0 is the smallest whole number **[Ans: (b) 0]**

**9.** **Which of the following expressions is not zero?**
(a) $0 \times 0$ (b) $0 + 0$ (c) $\frac{2}{0}$ (d) $\frac{0}{2}$
**Hint :** Dividing by 0 is not defined. **[Ans: (c) $\frac{2}{0}$]**

**10.** **Which of the following is not true?**
(a) $(4237 + 5498) + 3439 = 4237 + (5498 + 3439)$
(b) $(4237 \times 5498) \times 3439 = 4237 \times (5498 \times 3439)$
(c) $4237 + 5498 \times 3439 = (4237 + 5498) \times 3439$
(d) $4237 \times (5498 + 3439) = (4237 \times 5498) + (4237 \times 3439)$
**Hint :** $4237 + 5498 \times 3439 = 4237 + (5498 \times 3439)$
**[Ans: (c) $4237 + 5498 \times 3439 = (4237 + 5498) \times 3439$]**

# ADDITIONAL QUESTIONS

**1.** **Are all whole numbers are natural numbers? Justify your answer?**
**Sol:** No, all whole numbers are not natural numbers.
Because '0' belongs to whole number system. But it is not in natural number system.
∴ All whole numbers except '0' are natural numbers.

**2.** **Write the largest six digit number and write the number names in words using the Indian and International system.**
**Sol:** The largest six digit number is 999999
Number names is nine lakh ninety nine thousand nine hundred and ninety nine

**Indian System**

| Lakh | Ten Thousand | Thousand | Hundred | Ten | One | The Number |
|---|---|---|---|---|---|---|
| 9 | 9 | 9 | 9 | 9 | 9 | 9,99,999 |

**International System**

| Hundred Thousand | Ten Thousand | Thousand | Hundred | Ten | One | The Number |
|---|---|---|---|---|---|---|
| 9 | 9 | 9 | 9 | 9 | 9 | 9,99,999 |

## EXERCISE 1.6

### Miscellaneous Practice Problems

**1.** **Try to open my locked suitcase which has the biggest 5 digit odd number as the password comprising the digits 7, 5, 4, 3 and 8. Find the password.**
**Sol:** Using place value chart
The number should be the biggest odd

| TTH | TH | H | T | O |
|---|---|---|---|---|
| 8 | 7 | 5 | 4 | 3 |

The password is 87543

**2.** **As per the census of 2001, population of four states are given below. Arrange the states in ascending and descending order of their population.**

| State | Population |
|---|---|
| Tamil Nadu | 72147030 |
| Rajasthan | 68548437 |
| Madhya Pradesh | 72626809 |
| West Bengal | 91276115 |

**Sol:** All the four values have 8 digits

∴ Comparing the left most digits we have 91276115, 72626809, 72147030, 68548437

Descending order: 91276115 > 72626809 > 72147030 > 68548437

Ascending order: 68548437 < 72147030 < 72626809 < 91276115

Ascending order: Rajasthan < Tamil Nadu < Madhy Pradesh < West Bengal

Descending order: West Bengal > Madhya Pradesh > TamilNadu > Rajasthan

**3.** **Study the following table and answer the questions.**

| Year | No. of Tigers |
|---|---|
| 1990 | 3500 |
| 2008 | 1400 |
| 2011 | 1706 |
| 2014 | 2226 |

**(i) How many tigers were there in 2011?**
**(ii) How many tigers were less in 2008 than in 1990?**
**(iii) Did the number of tigers increase or decrease between 2011 and 2014? If yes, by how much?**

**Sol:** (i) There are 1706 tigers in 2011

(ii) No. of tigers in 2008 = 1400

No. of tigers in 1990 = 3500

There were 2100 lesser tigers

```
 3500
 1400
 2100
```

(iii) No. of tigers in 2014 = 2226

No. of tigers in 2011 = 1706

= 520 ∴ 2226 > 1706

∴ The number of tigers increased from 2011 to 2014.

Yes, the number of tigers increased, 520 more tigers are there in 2014.

**4.** **Mullaikodi has 25 bags of apples. In each bag there are 9 apples. She shares them equally amongst her 6 friends. How many apples do each get? Are there any apples left over?**

**Sol:**

Number of bags of apples = 25

Number of apples in each bag = 9

∴ Total apples = 25 × 9 = 225

Number of friends = 6

Number of apples each friend get = 225 ÷ 6 = 37

Number of apples each get = 37

Remaining apples = 3

**5.** **A Poultary has produced 15472 eggs and fits 30 eggs in a tray. How many trays do they need?**

**Sol:**

Total eggs = 15472
No. of eggs in 1 tray = 30
∴ No. of trays needed = 15472 ÷ 30 = 516
No. of trays needed = 516
[515 + 1 for remaining 22 eggs]

```
      515
30 | 15472
     150
     ---
      47
      30
     ---
      172
      150
     ---
       22
```

## Challenging Problems (Text book Page No.36 & 37)

**6.** **Read the table and answer the following questions.**

| Name of the Star | Diameter (in miles) |
|---|---|
| Sun | 864730 |
| Sirius | 1556500 |
| Canopus | 25941900 |
| Alpha Centauri | 1037700 |
| Arcturus | 19888800 |
| Vega | 2594200 |

**Sol:** **(i)** **Write the Canopus star's diameter in words in the Indian and the International System.**

Canopus star's diameter is 25941900 miles

Indian System: Two crore Fifty Nine Lakh Forty one thousand Nine Hundred

International System: Twenty Five Million Nine Hundred Forty One Thousand Nine Hundred.

**(ii)** **Write the sum of the place values of 5 in Sirius star's diameter in Indian System.**

Sirus star's diameter = 1556500 miles

Sum of place values of 5 is 5 × 100000 + 5 × 10000 + 5 × 100

= 500000 + 50000 + 500 = 5,50,500

**(iii)** **Eight hundred sixty four million seven hundred thirty. Write in Indian System**

Given value is 864,000,730

In Indian System 86,40,00,730

Eighty six crore forty lakhs seven hundred and thirty.

**(iv)** **Write the diameter in words of Arcturus star in International System.**

Diameter of Arcturus Star is 19,888,800 miles Nineteen Million Eight Hundred and Eighty Eight Thousand Eight Hundred.

**(v)** **Write the difference of the diameters of Canopus and Arcturus star in the Indian and the International Systems.**

Diameter of Canopus = 25941900
Diameter of Arcturus = 19888800
Difference = 6053100

In Indian System 60,53,100
Sixty lakh fifty three thousand one hundred.
In International System 6,053,100
Six Million fifty three thousand one hundred.

**7. Anbu asks Arivu Selvi to guess a five digit odd number. He gives the following hints.**

- **The digit in the 1000s place is less than 5**
- **The digit in the 100s place is greater than 6**
- **The digit in the 10s place is 8.**

**What is Arivu Selvi answer? Does she give more than one answer?**

**Sol:** There are more than one answers.

One of them is **54781**

Some of the other numbers may be 64783, 74785, 84787 and so on.

**8. A Music concert is taking place in a stadium, A total of 7,689 chairs are to be put in rows of 90.**

**(i) How many rows will there be?**

**(ii) Will there be any chairs left over?**

$$\begin{array}{r|l} & 85 \\ \hline 90 & 7689 \\ & 720 \\ \hline & 489 \\ & 450 \\ \hline & 39 \end{array}$$

**Sol:** (i) There will be 85 rows

(ii) Yes, There are 39 chairs left over.

**9. Round off the seven digit number 29,75,842 to the nearest lakhs and ten lakhs. Are they the same?**

**Sol:**

| TL | L | TTH | TH | H | T | O |
|---|---|---|---|---|---|---|
| 2 | 9 | 7 | 5 | 8 | 4 | 2 |

To the nearest lakhs ⇒ 30,00,000

To the nearest ten lakhs ⇒ 30,00,000

Yes, they are the same.

**10. Find the 5 or 6 or 7 digit numbers from a newspaper or a magazine to get a rounded number to the nearest ten thousand.**

(i) A rounded number.

(ii) A rounded amount of money.

(iii) An exact number.

**Sol:** (i) Nearly 3,00,000 students are going to appear for the Public Examination this year.

(ii) A discount of ₹ 1,00,00,000 will be allowed to the farmers

(iii) 4,62,790 students have benefited by scholarships.

Maths

## UNIT TEST

**Time : 45 Minutes** **CHAPTER - 1** **Marks: 25**

**I. Fill in the blanks.** **[5 × 1 = 5]**

1. In Indian System of numeration, the number 51732123 is written, using commas as _____.
2. The smallest four digit number with different digits is _____.
3. Rounded off value of 2538473 to the nearest thousands in _____.
4. 1 Crore = _____ millions
5. Place Value of 6 in 9643210 is _____.

**II. Say True or False.** **[5 × 1 = 5]**

6. The numbers 4578, 4587, 5478, 5487 are in ascending order.
7. All whole numbers are natural numbers.
8. Predecessor of a 2 digit number is always a 2 digit number.
9. $716 \times 3 + 716 \times 7 = 7160$.
10. 1 has no predecessor in the whole numbers.

**III. Answer any three of the following questions :** **[3 × 2 = 6]**

11. Write the smallest 8 digit number having four different digits.
12. What is the place value of 7 in 674321
13. Estimate the number 95623 to the nearest hundred.
14. Estimate the sum (274 + 143) to the nearest hundred.
15. Find the product of the largest 3 digit number and the largest five digit number.
16. State the property used in each of the following
    (a) $12349 \times 0 = 0$. (b) $63 \times 136 + 63 \times 36 = 63\ (136 + 36)$
17. Find the product $4 \times 12995 \times 250$.
18. Determine the sum using suitable rearrangements. 953 + 707 + 647.

**IV. Answer any three of the following questions.** **[3 × 3 = 9]**

19. The product of two numbers is 296784 one of them is 432. Find the other number.
20. If 28362 people were watching a TV show. Write the people to the nearest thousand.
21. A village consumes 40 litre of milk in morning and 50 litre of milk in the evening. If the cost of milk is ₹ 23 per litre. Find the total sell in rupees.
22. Write the natural number and whole number which has no predecessor.
23. Simplify $73 \times 10 \div 2 + (5 + 3 \times 0) \div 5$
24. If Amali saves ₹ 825 every month. How much she saves in 14 years?
25. Cost of a bench is ₹ 6280. Find the cost of 268 benches to the nearest hundreds.
26. If the total population of a city is 436926208 and the number of males is 80260204. Then find the number of females in the city?
27. Evaluate $60 \div [\ 2 + 20 \div \{2 + 12 \div (2 + 4 \div 2)\}]$
28. Using properties of whole numbers. Find the value of the following:
    (i) $5712 \times 75 - 72 \times 5712$ (ii) $2103 \times 68 - 32 \times 2103$
29. Find the value of the following
    $207 \times 80 + 207 \times 20$.
30. Find the product of the smallest whole number with the largest three digit whole number.
31. There are two whole numbers, which when multiplied by itself gives the same number. What are they?